

"PLM, PDM and PIM - What Are They? Why They Are Needed?"

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Product Manager & PLM Analyst**

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Rhapsody Technologies, Inc.**



Agenda

1. Introduction
2. Master Data
3. Master Data Management (MDM)
4. Product Information Management (PIM)
5. Product Data Challenges
6. Life Cycle Management
7. Product Life Cycle Management (PLM)
 - Agile PLM
8. Oracle's MDM Foot Print
9. Oracle Product Data Hub
10. Use Cases
11. Conclusion





Introduction



About Presenter - Balaji



Balaji Kandasamy
Product Manager & PLM Analyst



- ❑ Product Development Professional with more than 15 years of hands on experience
- ❑ PLM Analyst
- ❑ PDM and 3D CAD Administrator
- ❑ Expertise in Pro-Engineer & SolidWorks CAD Systems
- ❑ Stage gate process creator for product development
- ❑ Creative engineer awarded with more than 40 US and International patents



About Presenter - Mani



Mani Kumar Manda
Rhapsody Technologies, Inc.
Naperville, IL, USA



- ❑ Founder and Chair for OAUG CDM SIG
 - <http://cdmsig.oaug.org>
 - <http://groups.yahoo.com/group/cdmsig>
- ❑ President of Rhapsody Technologies, an Oracle partner with specialization in implementing Oracle's MDM applications
- ❑ Frequent speaker of topics associated with Oracle's MDM products – Customer Data Hub, Product Hub, Site Hub and Supplier Hub
- ❑ Working with Oracle Applications for over 18 years and has implemented Technology Solutions for clients in many industries.



About Rhapsody

Helping customers realize benefits of Oracle EBS since 1998

A full Services Consulting firm with focus on Oracle EBS and Fusion Applications

Oracle's Preferred Partner of choice for EBS based MDM Hubs

Oracle EBS expertise from the days of Version 9.4.2

High degree of Client Satisfaction

Flexible and Adaptable to meet unique business challenges of Clients



Our Service Offerings

Offerings

- Assessments / Audits
- Business Case Development
- Data Governance Initiatives
- Data Quality Initiatives
- Enterprise Information Mgmt. (EIM)
- Health Checks
- Implementation Roadmaps
- Implementations / Upgrades
- Remote Support
- Strategy and Architecture
- Training and Workshops
- Turn-Key Projects

Applications and Technologies

ERP / CRM / SCM / HCM

E-Business Suite (R12)

Fusion Applications

Oracle MDM Hubs & related Products

Customer Hub (CDH & UCM)
Fusion Customer Hub

Product Hub (PIM / PDH)
Fusion Product Hub

Supplier Data Hub
Supplier Life Cycle Mgmt.

Site Hub

Hyperion DRM

Enterprise Data Quality
– Party (EDQ)

Enterprise Data Quality
– Product (EDQP)

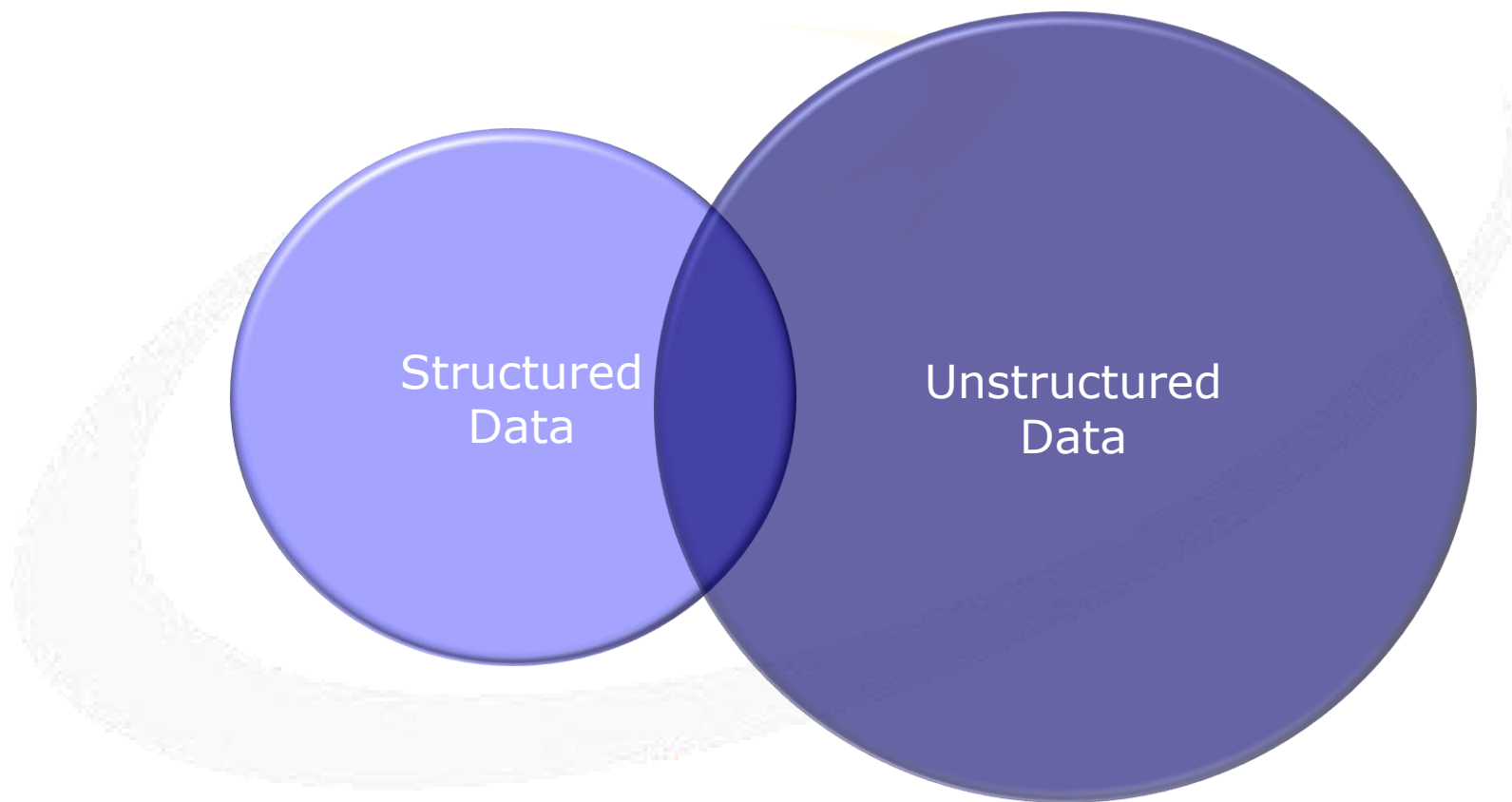




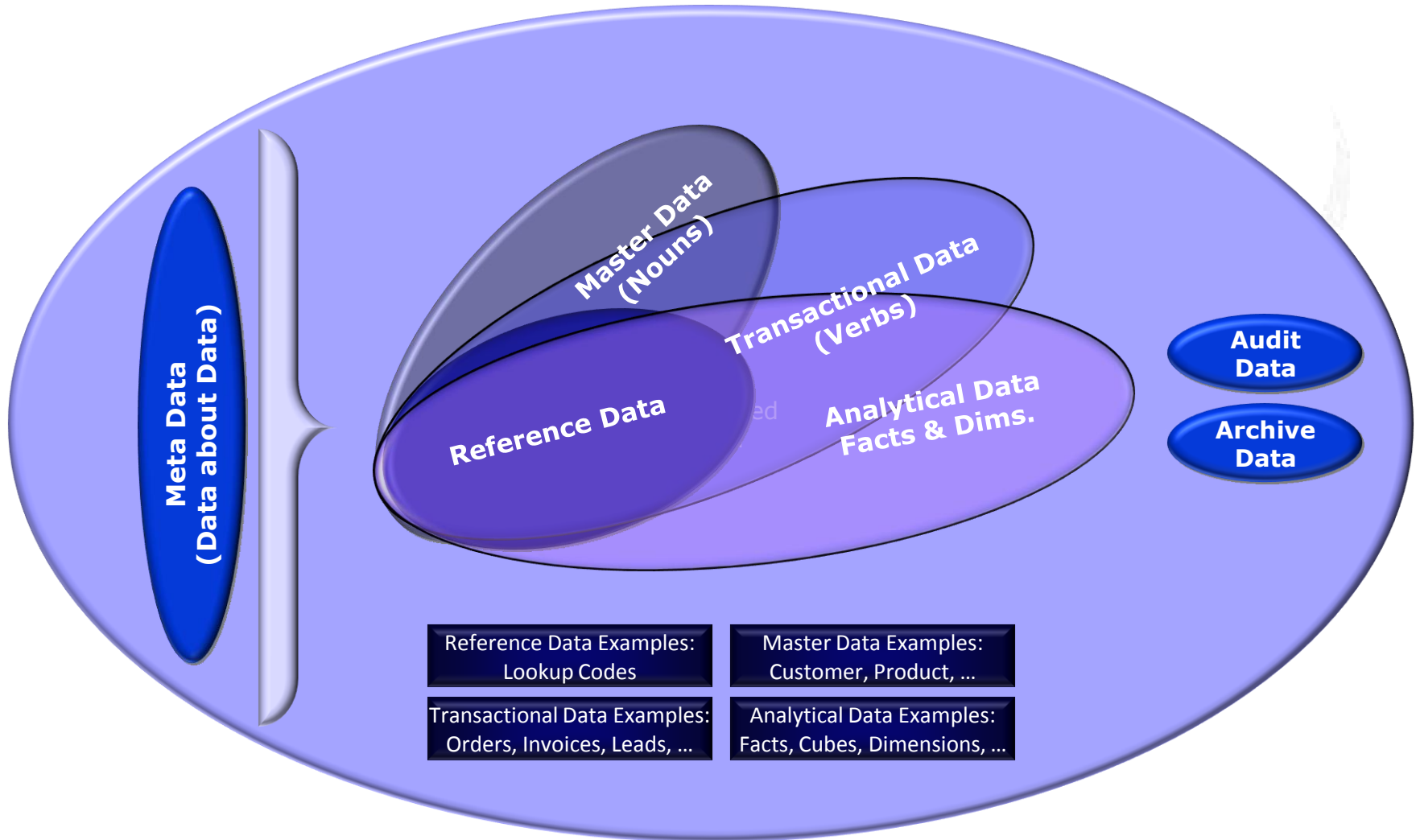
What is “Master” Data?



Data is ...



Structured Data “Hierarchy”



Then “Master” Data

- ❑ has a longer life span
- ❑ changes gradually over time
 - both due to internal and external factors
- ❑ requires an on-going effort (requires programs, not just projects)
- ❑ requires Business leadership to keep it at optimal quality
- ❑ requires IT leadership to provide technology and tools to business to maintain it on an ongoing basis





**Then “Master Data Management”
means ...**



Per Rhapsody, MDM means

1

About establishing the Single Source of Truth for Master Data, in other words a System of Record/or Reference that is reliable, available when needed and is always maintained.

2

About consolidating, de-duping, and cross-referencing the Master Data across heterogeneous systems to establish a Single View of the Master Data.

3

About providing 360^o view of the Master data.

4

About establishing a Data Governance framework for welfare of the Master Data solution by establishing a governing Organization; Roles and Responsibilities as well as Policies and Procedures to steward the master data on an ongoing basis.

5

About facilitating the definition and maintenance of Analytics and Segmentation to drive growth in top line (Revenue) and bottom line (Profits) by increasing the effectiveness of various business processes.

6

Increasing the operational excellence across the Enterprise.

7

Accomplish all of the above with a synergistic alliance between Business and IT.



Master Data Management (MDM)

According to ‘The CDI Institute’

- ❑ The authoritative, reliable foundation for data used across many applications & constituencies with the goal to provide a single view of the truth no matter where it lies.

According to Gartner

- ❑ Master Data: Consistent and Uniform set of identifiers and attributes that describe the core entities of the enterprise
- ❑ MDM: A technology-enabled discipline in which business and IT organizations work together to ensure uniformity, accuracy, stewardship, semantic consistency and accountability of the enterprise’s official, shared master data assets.

According to Forrester

- ❑ Master data: Most trusted and unique “version” of important enterprise data, such as customer, product, employee, or asset that is captured, maintained, and used across disparate systems.
- ❑ MDM: Business capability that delivers master data throughout an organization through the alignment of multiple information management technologies such as PIM, CDI, and data quality, plus business process improvements and organization commitments.



MDM Domains (or Entities)

MDM has several subject area domains. The most popular domains of interest in MDM are:

- Customers
 - Partners
 - Is widely referred as Customer Data Integration (CDI)
 - Also known as Customer Hubs
- Supplier
 - Supplier Hub
- Products
 - Is widely referred as Product Information Management (PIM)
 - Also known as Product Hubs
- Employee
- Chart of Accounts
- Assets
- Etc.



MDM Domains

- ❑ Forms the foundation for Operational Systems
- ❑ Forms the foundation for Data warehouse and Business Intelligence initiatives
- ❑ Are enterprise-wide
 - Cross-Business Unit, Cross-functional, Cross-Departmental
- ❑ Provides reliable, secure and correct information to the needed parties





Then

Product Information Management (PIM)

refers to



PIM Means

- ❑ An MDM solution for Product Domain
- ❑ Known as “MDM for Product”
- ❑ Formerly known as “Product Information Management”
- ❑ Vendor Solutions are often called with
 - Product Data Hub
 - PIM Hub
 - MDM for Product
 - Multi-Domain MDM Hub
 - Etc.

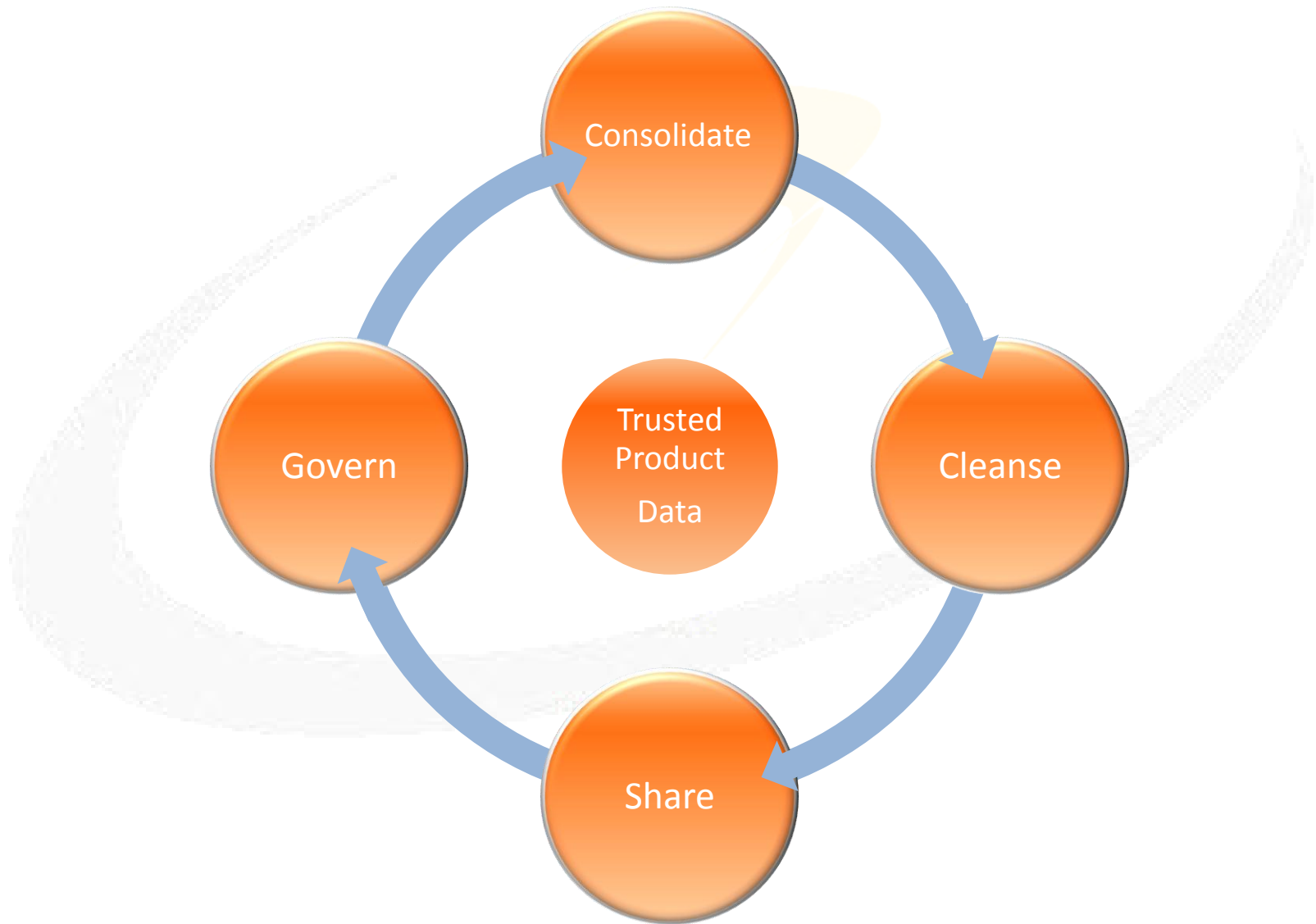




What does Product Hub do?



Oracle Product Hub



Oracle PIM Key Features & Functionality

- ❑ Consolidate
 - ❑ Import
- ❑ Cleanse
 - ❑ Enterprise Data Quality for Product
- ❑ Share
 - ❑ Publish
 - ❑ Syndication
- ❑ Govern
 - Item Catalogs and Catalog Categories
 - User Defined Attributes (UDA)
 - Item Cross References
 - Product Work Bench
 - Security
 - Change Management
 - Search UI
 - Item Work Bench

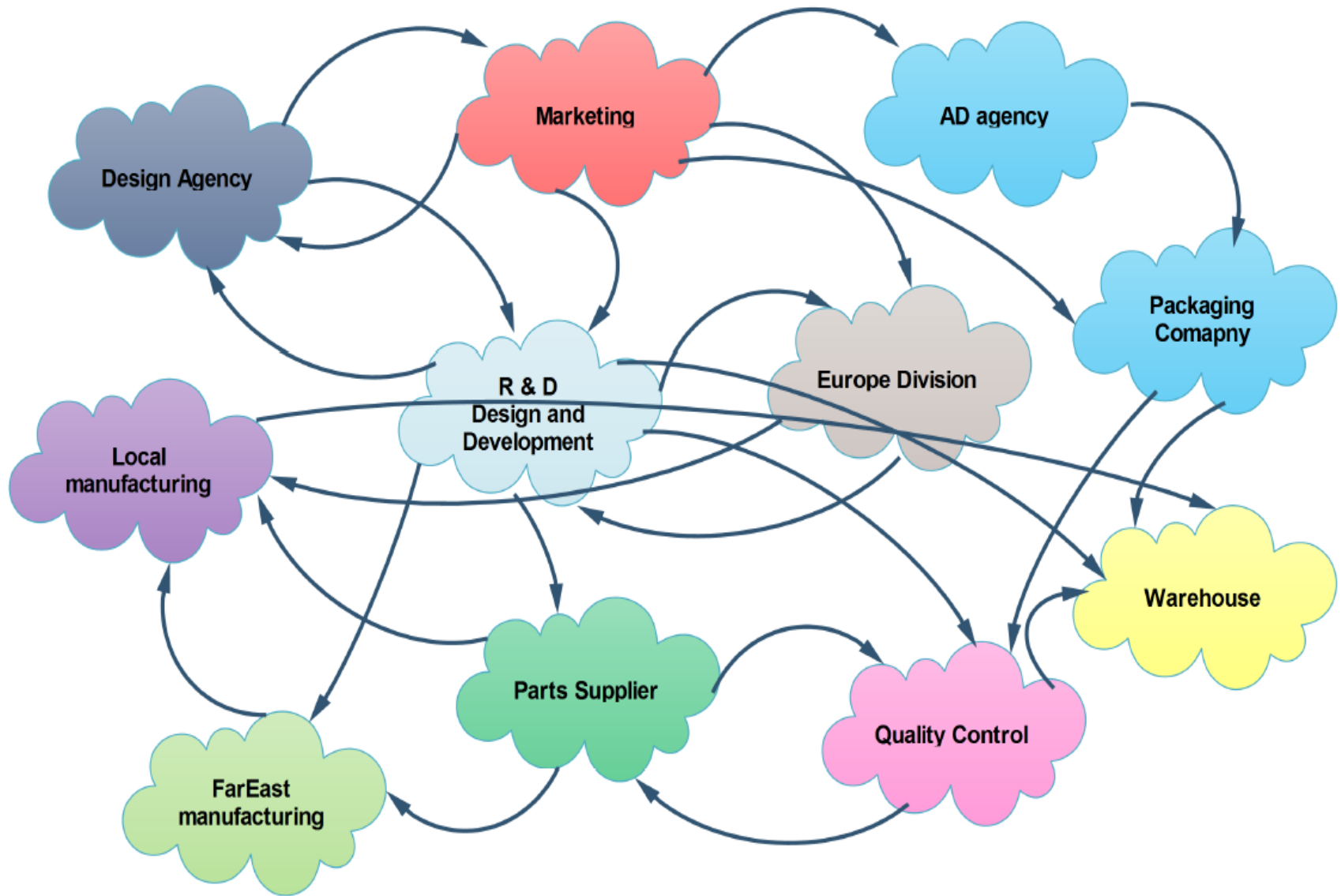




Product Data Challenges



A typical “Product Development” Scenario



PIM Data Challenges

- ❑ Duplicated across numerous IT applications
- ❑ Product descriptions are often attribute based
- ❑ Non-standard product descriptions
- ❑ Organizations are not truly aware of state of product data quality
- ❑ For those who are aware of the state of their product data quality
 - Management does not see the product data quality problem as imperative to solve
 - Difficult to make business case
 - Not aware of the cost of the poor quality product data to their organization



PIM Data Challenges

□ Impact on Business

- A truck carrying merchandise stopped at the boarder crossing because the gross weight of the truck is different from the weight on the pro-forma Invoice
 - Merchandise awaiting customs clearance due to data discrepancies on pro-forma Invoice
- Out of stock scenario when indeed huge stocks of same product under different product number are sitting in the warehouse
- Silo'ed applications across divisions
 - One division is out of stock for a specific product, where as another division has ample supply of them
 - This is a classic problem for the Defense Department
 - Humvee Tires
- Cost of buying a product, when users can't find them in their application
- Loss of business on your web stores, when customers can't find the product they are looking for





What does Life Cycle Management mean?



Life Cycle Management Means

- ❑ Just like Humans, who go through various stages in life from their birth to death, Master Data in any organization also goes through various stages between its identification/inception through obsolescence
- ❑ For Example
 - Product: Product Conception to Realization to Disposal
 - Conceive
 - Design
 - Realize
 - Service
 - Dispose



Life Cycle Management Means ...

□ For Example

- **Supplier: Identification to Obsolescence**
 - Supplier Identification
 - On-boarding
 - Maintenance & Assessment
 - Obsolescence
- **Customer: Prospect to Customer to Obsolescence**
 - Prospect Qualification
 - Lead Generation & Qualification
 - Opportunity Management
 - Customer Review (including credit checking)
 - Maintenance
 - Obsolescence

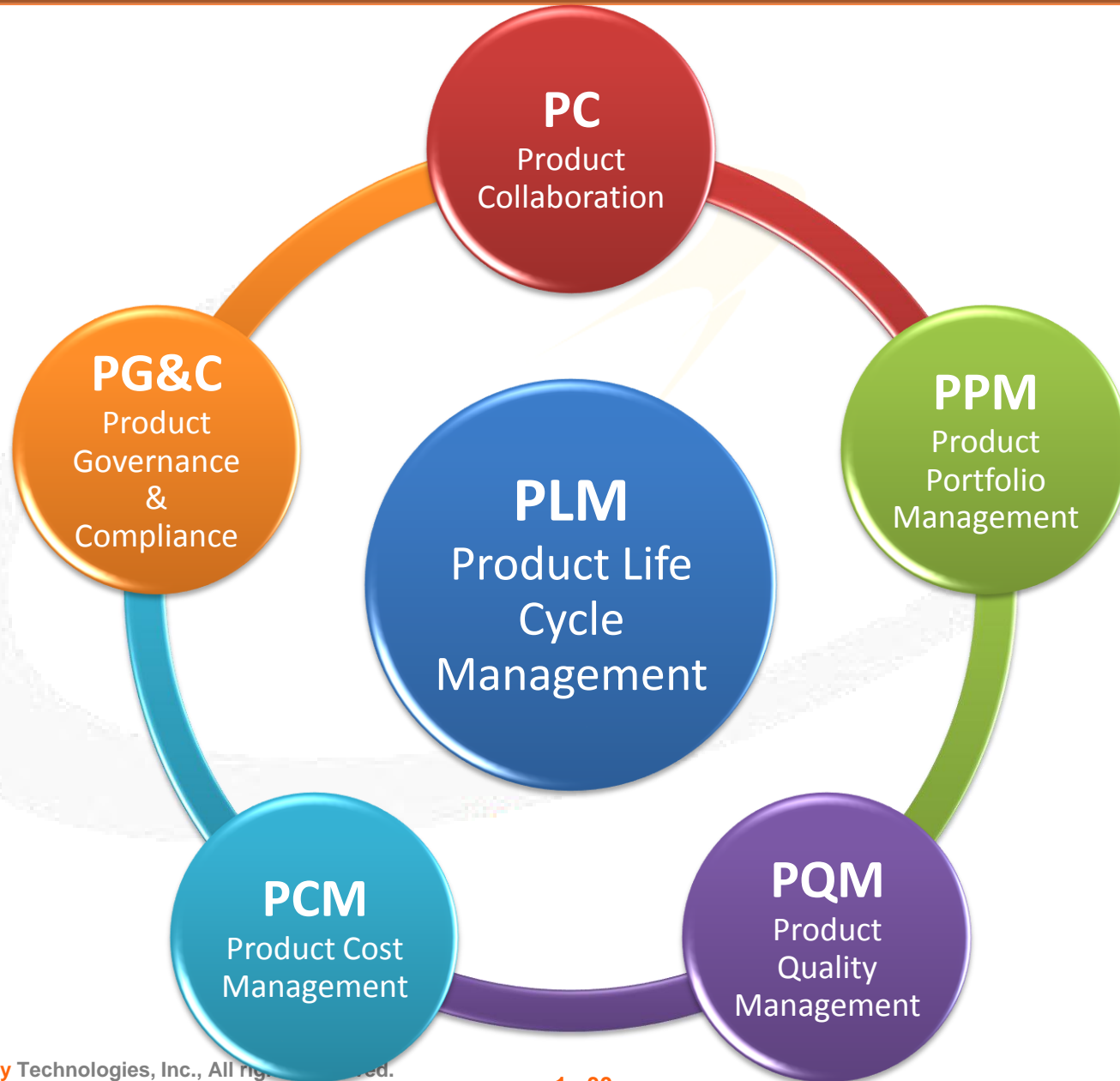




Product Life Cycle Management then refers to ...



PLM Solution – Client Applications



Life Cycle Management Means

Product Life Cycle Management (PLM) refers to the process of managing the entire life cycle of a product from its conception, through design and manufacture, service and disposal

- ❑ PLM describes the engineering aspect of a Product, from managing descriptions and properties of a product through its development and useful life
- ❑ The key areas of PLM are
 - Systems Engineering
 - Is focused on meeting all requirements through coordination of systems design process with all relevant disciplines involved
 - Product and Portfolio Management
 - Is focused on resource management, monitoring of the progress of the product development as per the project plan for new product development initiatives
 - Product Design
 - Is focused on concept design and analysis of the product
 - Manufacturing Process Management
 - Is focused on manufacturing process of planning and manufacturing of the product
 - Product Data Management
 - Is focused on capturing and managing information through development process

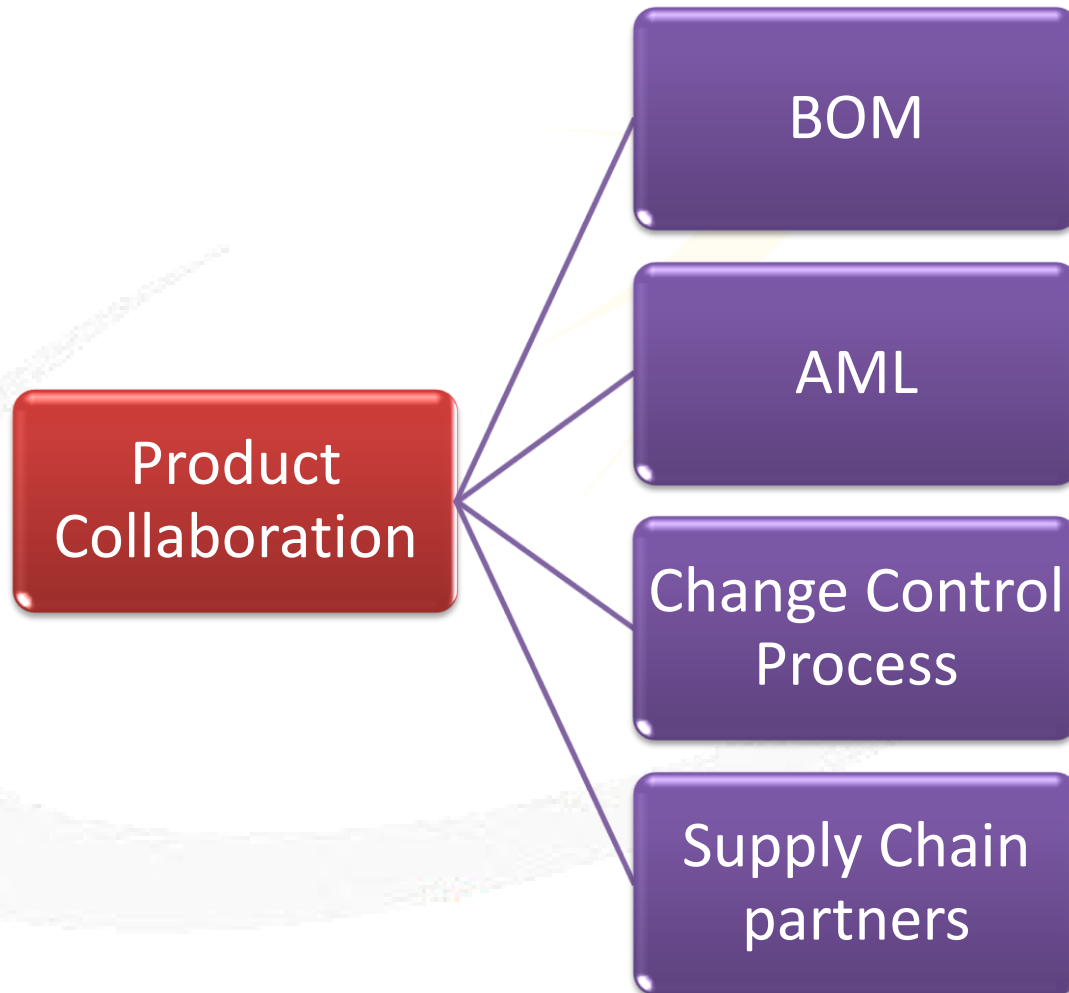


Benefits of PLM

- ❑ Improved product quality due to monitored product development process
- ❑ Reduced time to market due to optimized process of product development
- ❑ Better ability to build as well as reduce new product development costs due to the complete integration of engineering work flows
- ❑ Reduced wastage
- ❑ Enhanced ability to do documentation means better compliance with RoHS or Title 21 CFR Part 11
- ❑ Most importantly, a better PLM process will enhance the ability to utilize contract manufacturers as well as provide access to them with the complete product information



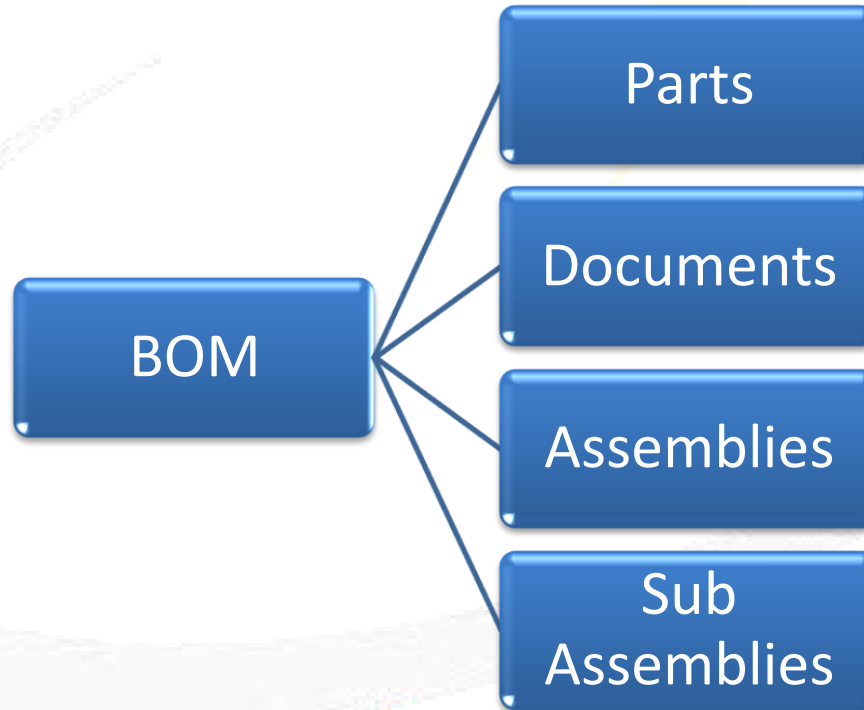
PC – Product Collaboration



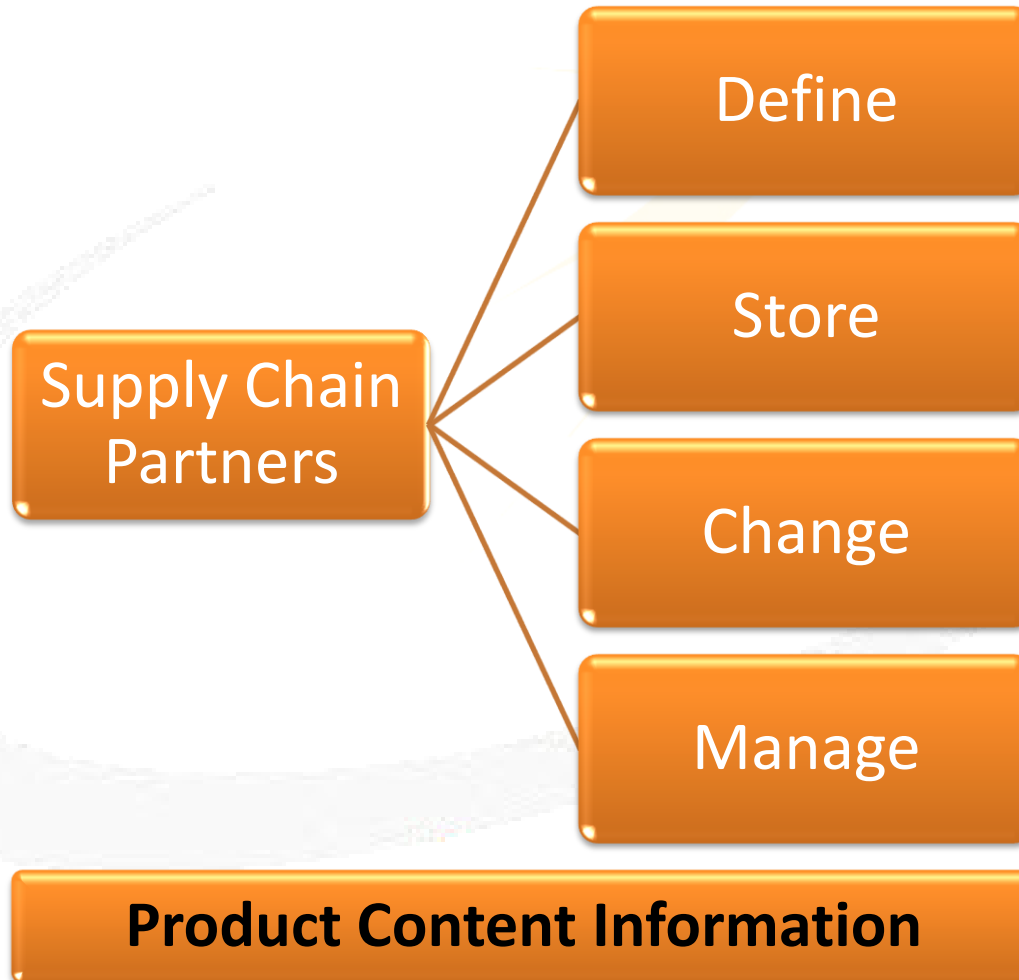
Workflow – Sequence of statuses a routable object follows



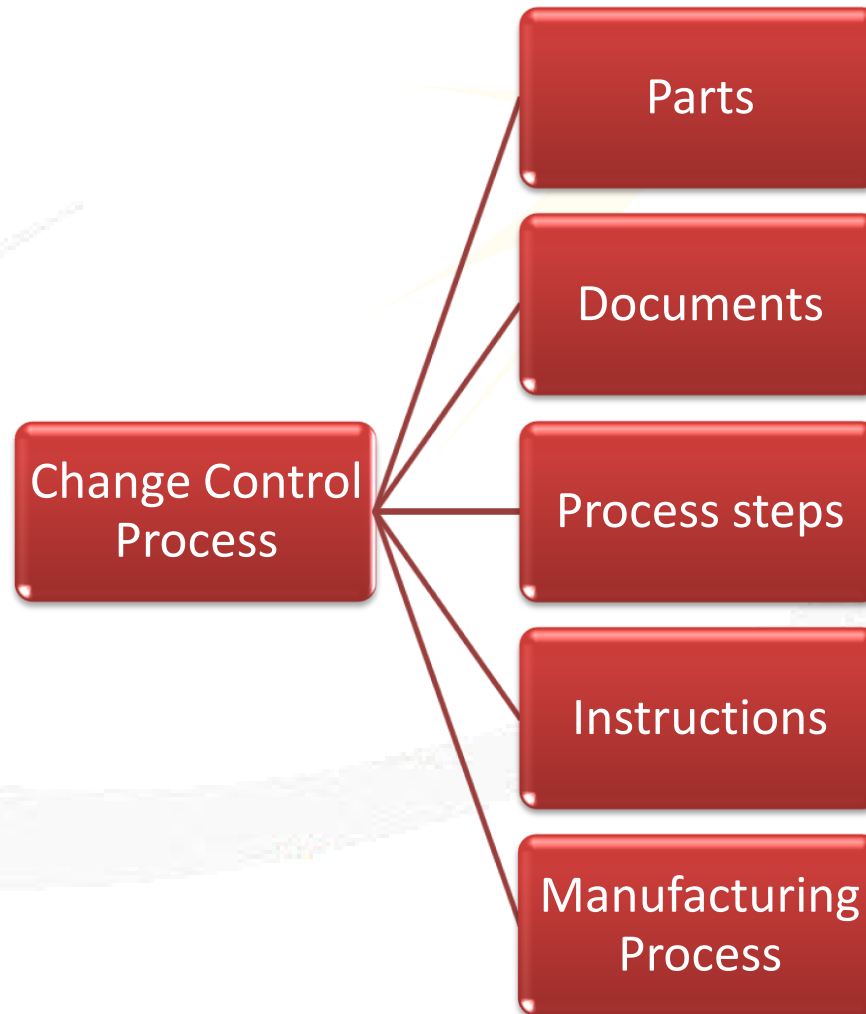
PC – Product Collaboration ...



PC – Product Collaboration ...



PC – Product Collaboration ...



PPM – Product Portfolio Management



PPM – Product Portfolio Management ...



**Gantt
Chart**

- Gates
- Activities
- Deliverables



Stage-Gate product development process

Phase 1

Gate 1

- Deliverables
- Activities
 - Task1
 - Task2

Phase 2

Gate 2

- Deliverables
- Activities
 - Task 3
 - Task 4

Phase n

Gate n

- Deliverables
- Activities
 - Task n1
 - Task n2



PQM – Product Quality Management



Track and Manage Quality Data

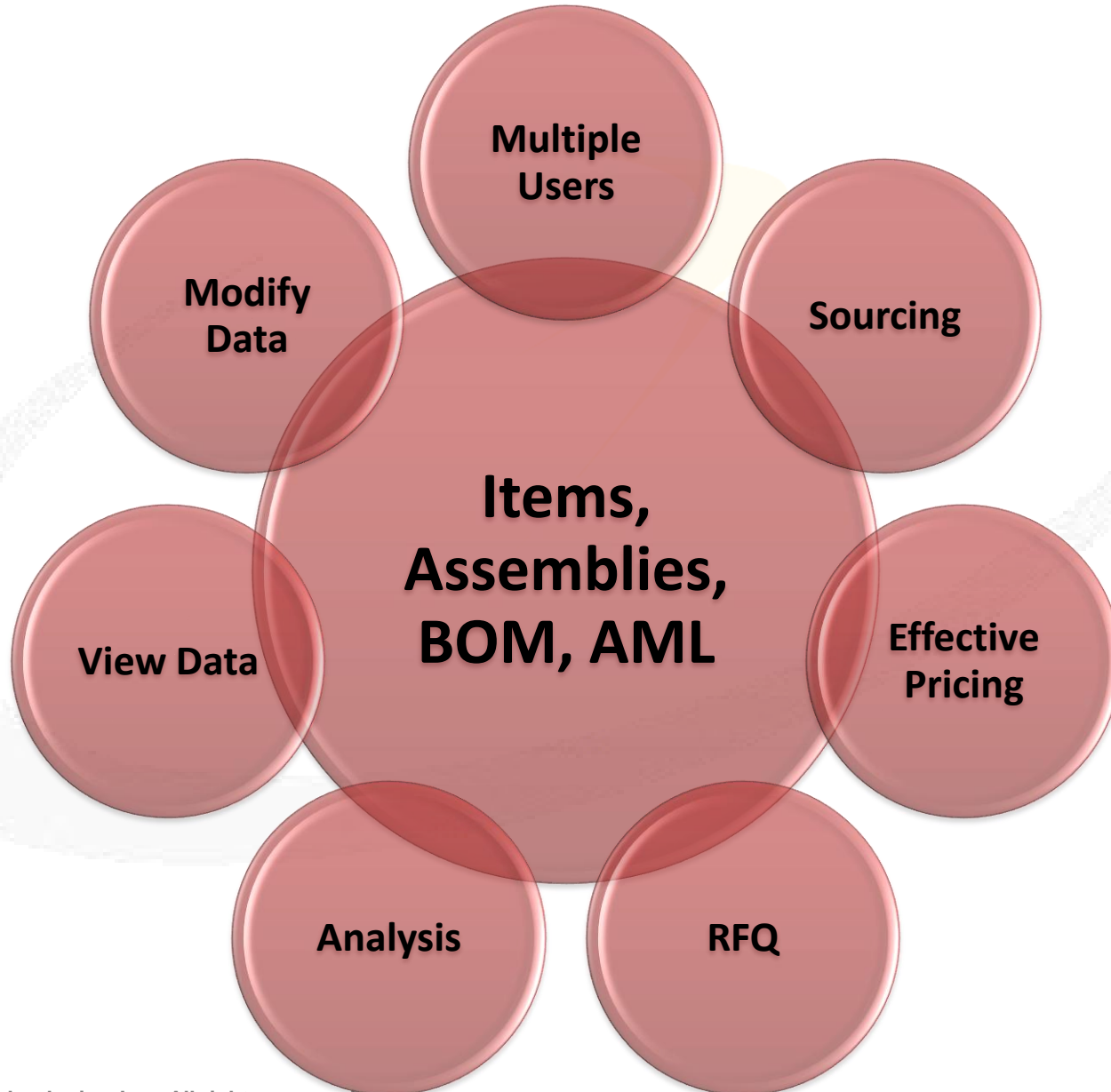
- Field Failures
- Customer Complaints
- Product Defects
- Manufacturing Defects
- Enhancement Requests
- CAPA

PQM Benefits

- Satisfied Customers
- CRM Integration
- Improved Quality
- Lower Cost
- Compliance



PCM – Product Cost Management



PCM – Product Cost Management ...



Integrate & Leverage Business Processes



PG&C – Product Governance and Compliance

Collect

Information from
vendor (Parts,
Material,
Substance)

Analyze

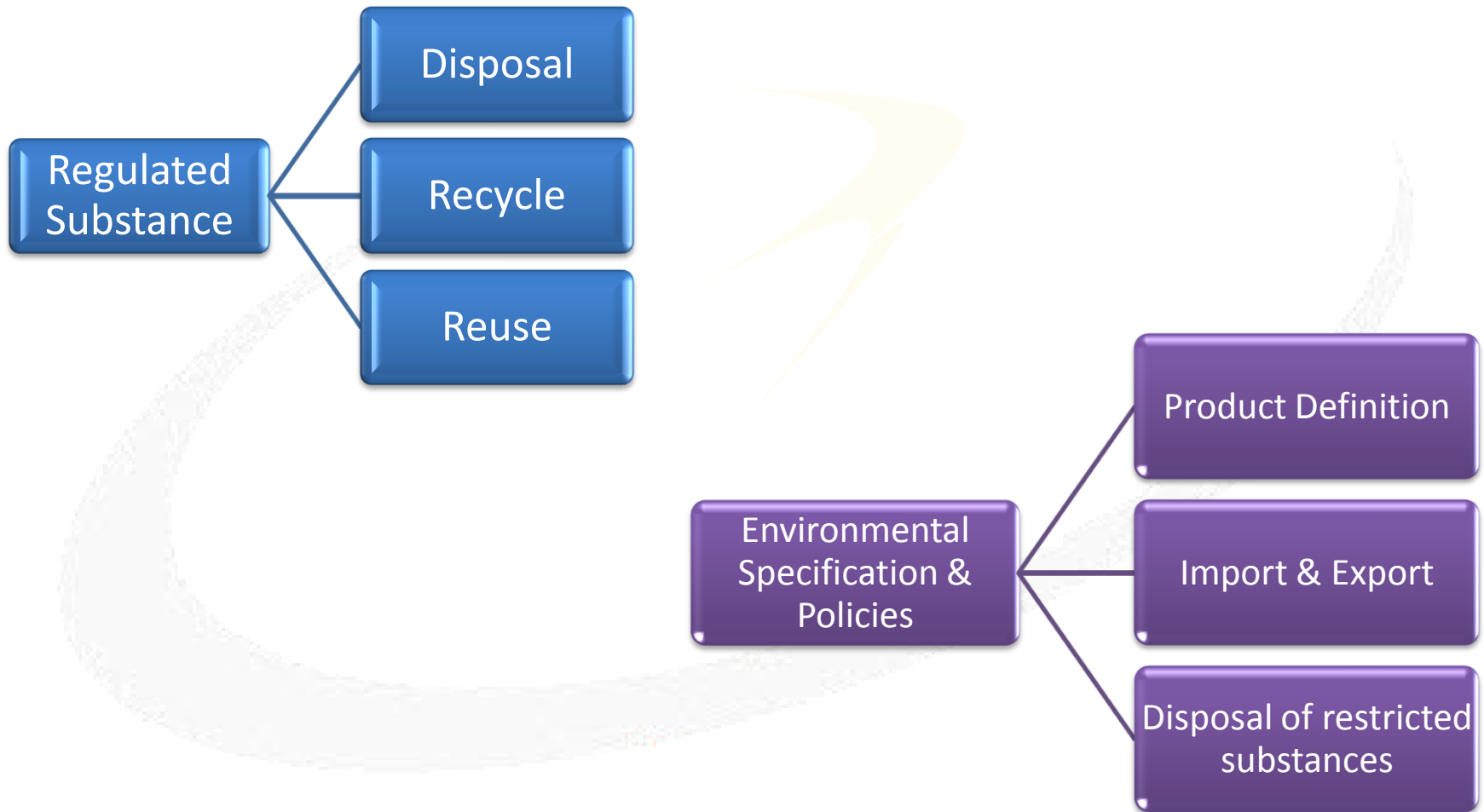
Compare with
established
Standards

Reports

Documentation of
Compliance



PG&C – Product Governance and Compliance



Manages Entire Product Compliance Process



PDM -VS- PLM

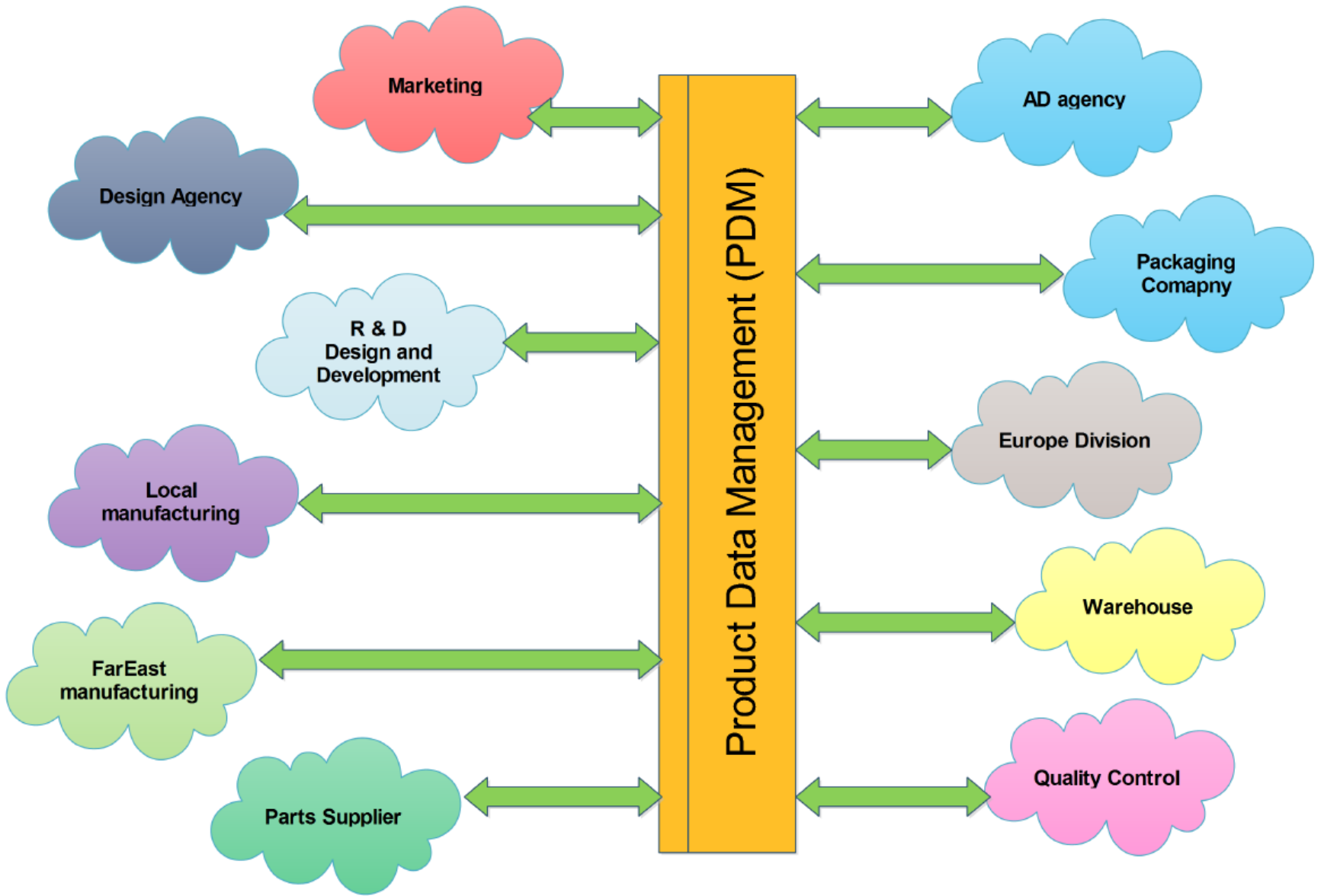
PDM

- Design related
- 3D, 2D, Tool Design, Layout
- Revision Control
- One final version
- Quick search and find
- Share with other divisions and vendors
- Same data available at R&D / plant / QA / Dock

PLM

- Product start to finish
- Data communication at enterprise level
- Co-ordinate and manage business processes
- Platform for collaboration with internal and external sources
- For multiple divisions, multiple departments, Global developments





Product Data Management (PDM)



PDM -VS- PIM

PDM

- Design related
- 3D, 2D, Tool Design, Layout
- Revision Control
- One final version
- Quick search and find
- Share with other divisions and vendors
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PIM

- Covers all Products
- Consolidation from PLM/PDM, ERP, CRM, Supply Chain and Logistics
- Comprehensive and Complete Product Information
- Product Data Governance
- Product Data Quality
- Synchronize with all Applications





Agile Product Life Cycle Management (Agile PLM)



Agile PLM

- ❑ Agile PLM solutions enable firms to accelerate product innovation and maximize product profitability by managing the information, process and decisions about products throughout their lifecycles
- ❑ Over 1300 global companies currently use Agile PLM
- ❑ Agile PLM is a collection of several applications and consists of
 - Agile Product Collaboration
 - Agile Product Cost Management
 - Agile Product Quality Management
 - Agile Product Governance & Compliance
 - Agile Engineering Data Management
 - Agile Product Portfolio Management
 - Agile Engineering Collaboration
 - AutoVue Electro-Mechanical Professional for Agile
 - Agile Variant Management
 - Etc.





Oracle's foot print in LM & MDM space



Oracle's Foot Print for Life Cycle Management Solutions

Supplier

Asset

Product

Supplier Life Cycle Management

Enterprise Asset Management

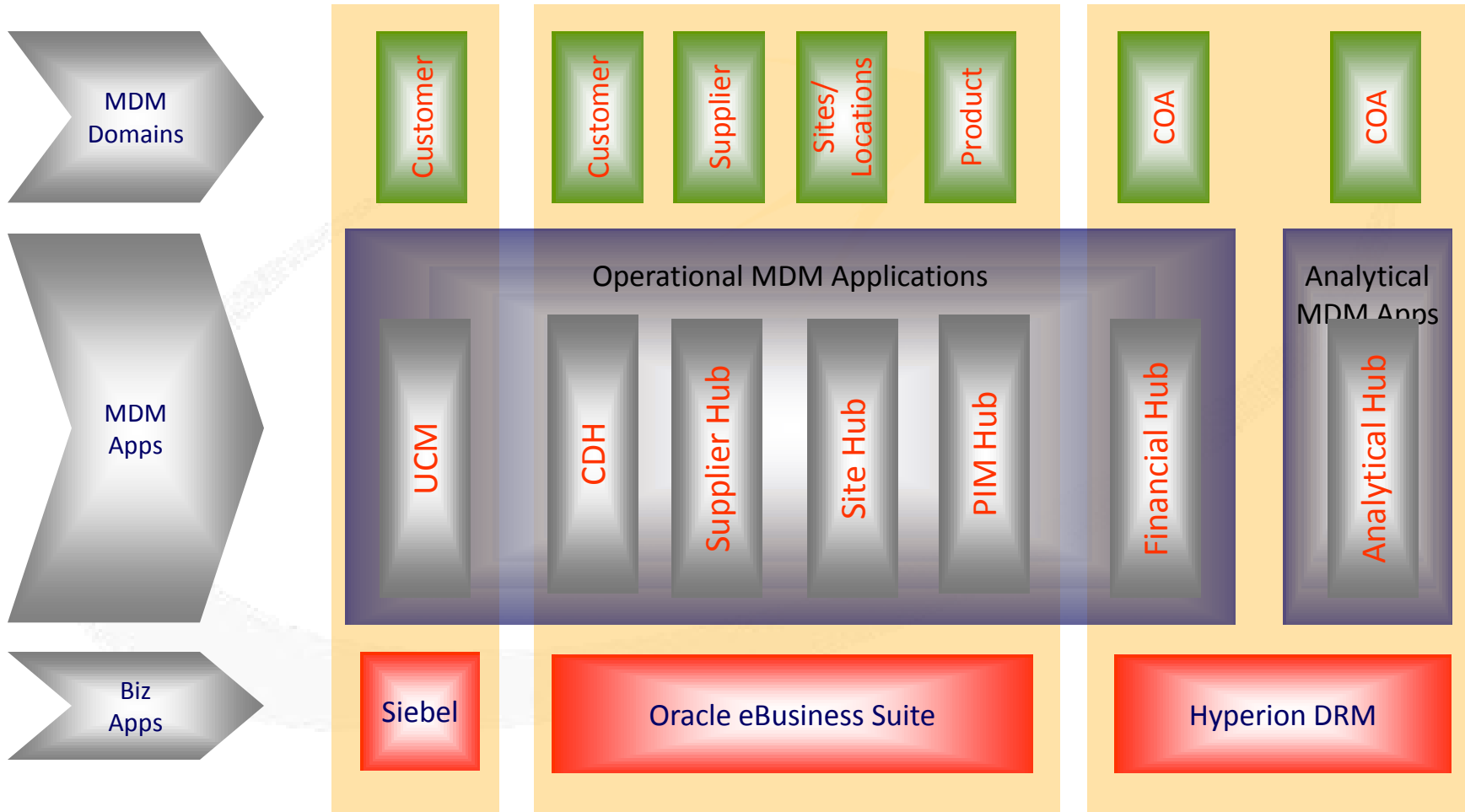
Built on Oracle EBS Platform

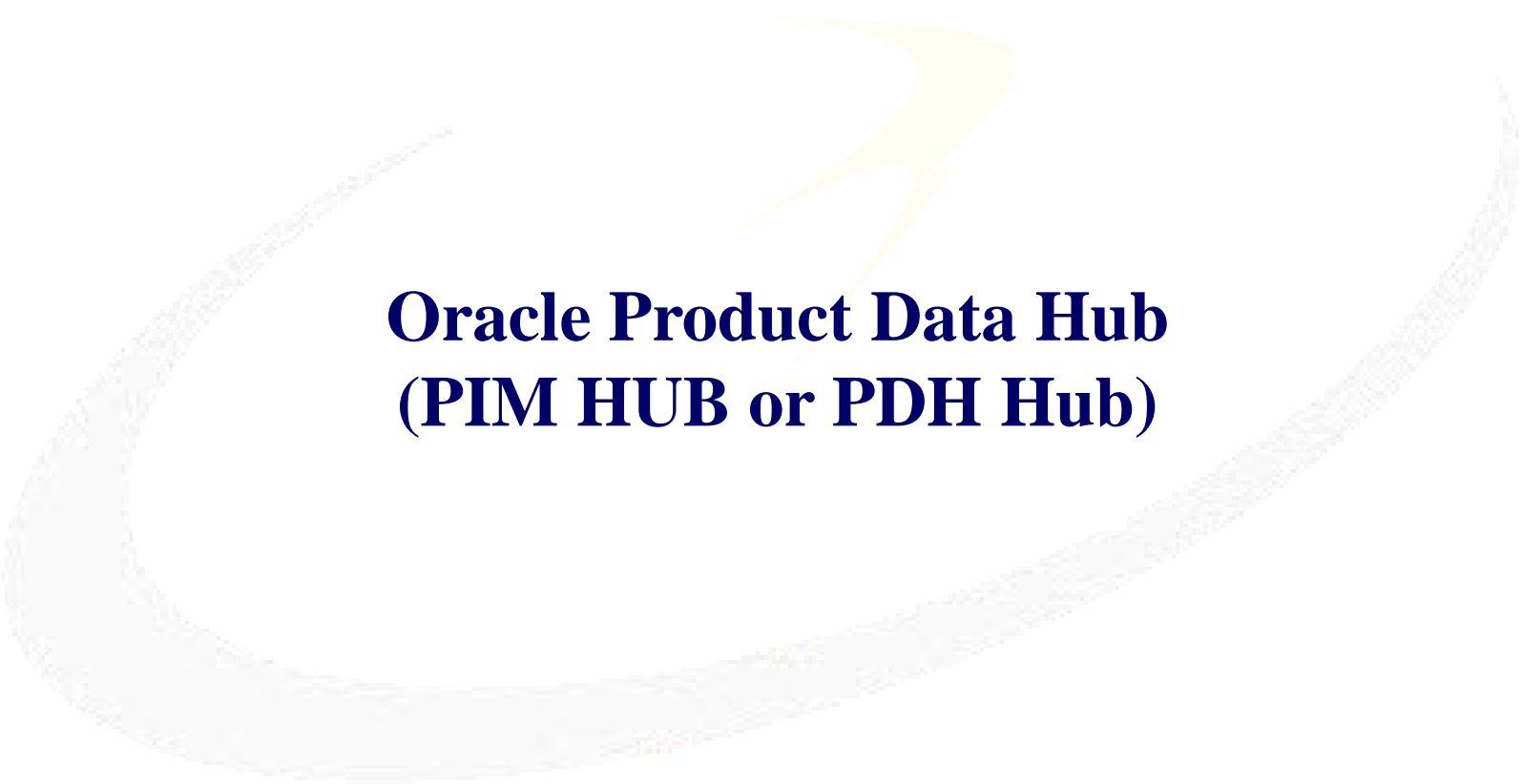
Agile Product Life Cycle Management

Built on Agile Platform



Oracle's MDM Foot Print





Oracle Product Data Hub (PIM HUB or PDH Hub)



Oracle PIM Data (Product) Hub

- ❑ Is an Enterprise data management solution for Product data
- ❑ Facilitates the centralized management of product data and eliminate product data fragmentation
- ❑ Provides secured access and search capabilities
- ❑ Publish product data to heterogeneous systems
- ❑ Enables the product data quality through utilization of DataLens product that is integrated with PIM Hub
- ❑ Enables the syndication of product data with GDSN and UCCnet



History of PIM

- ❑ In 2003 - Oracle released Advanced Product Catalog
- ❑ In 2004 – Oracle released first Product Hub
- ❑ In 2005 – Oracle released PIM Data Hub with enhanced functionality



Licensing

- ❑ Obtain license for PIM Data Hub for stand alone implementation
- ❑ Obtain license for PIM Data Hub Data Librarian for implementation of PIM as part of operational EBS implementation
- ❑ Options
 - Product Data Quality Server (DataLens of Silver Creek Systems)
 - Product Data Sync for GDSN & UCCnet





Use Cases for PLM, PDM and PIM



Your firm needs PLM

- if it is in Manufacturing industry
- to manage the engineering aspect of the Product
- to reduce the time to market duration for new products
- to facilitate the utilization of Contract Manufacturers
- to reduce the overall cost of the new product development
- to implement a framework for product optimization
- to provide better documentation
- to facilitate the regulatory compliance for RoHS or Title 21 CFS Part 11



Your firm needs PDM

☐ Your firm needs PDM

- If Design is a key function
- To shorten the Product Launch Cycle
- To Share information within cross-functional teams
- To be able to easily find Products through Search
- To manage revisions of the Design content



Use Cases for PIM

- ❑ Your firm needs PIM if
 - Your company grown through Merges
 - Has product data fragmented across heterogeneous systems
 - Has product data quality problems
 - Current needs are not being met by existing systems





Conclusion



Conclusion

- ❑ There is a room for each of the PLM, PDM and PIM applications
- ❑ Each of them try to solve difference piece of the puzzle
- ❑ You need them to provide a competitive advantage
- ❑ To increase product launch efficiencies
 - Faster Products
 - Better Quality Products
 - Reduced Cost Products





QUESTIONS
ANSWERS





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MDM Resources:

- ⦿ <http://www.rhaptech.com/resources.html>

Special Interest Groups:

Master Data Management SIG

- ⦿ <http://cdmsig.oaug.org>
- ⦿ <http://groups.yahoo.com/group/cdmsig>
- ⦿ <http://groups.yahoo.com/group/ucmsig>

Product Data Quality SIG

- ⦿ <http://tinyurl.com/29xocwv>

Supplier Life Cycle Management (SLM) & Supplier Data Hub (SDH) SIG

- ⦿ <http://tinyurl.com/2v2yyct>

Oracle Fusion Applications

- ⦿ <http://tinyurl.com/3232emw>